

(12) UK Patent Application (19) GB (11) 2 201 663 (13) A

(43) Application published 7 Sep 1988

(21) Application No 8805171

(22) Date of filing 4 Mar 1988

(30) Priority data

(31) 8700592

(32) 4 Mar 1987

(33) ES

(71) Applicant

Boix Maquinaria S. A.

(Incorporated In Spain)

Pol Ind Altabix, Villena 20, 03203 Elche (Alicante),
Spain

(72) Inventor

Jose Boix Jaen

(74) Agent and/or Address for Service

Marks & Clerk

57-60 Lincoln's Inn Fields, London, WC2A 3LS

(51) INT CL:
B65D 21/02 5/28

(52) Domestic classification (Edition J):
B8P S
U1S 1279 B8P

(56) Documents cited
GB A 2173480 GB A 2056951 GB 1483618
US 4151948 US 3940053 US 3820708

(58) Field of search
B8P
Selected US specifications from IPC sub-class
B65D

(54) Stackable boxes for carrying fruit

(57) An open-topped box for carrying fruit comprises a base 1, a pair of end walls 8, 9, a pair of side walls 6, 7, and openings 3 in the base. Protrusions 21 extending above the height of the walls of the box can be received by corresponding openings 3 in a similar box when stacked, thereby locating the stacked boxes in the plane of the base 1. The box is formed from a single folded sheet.

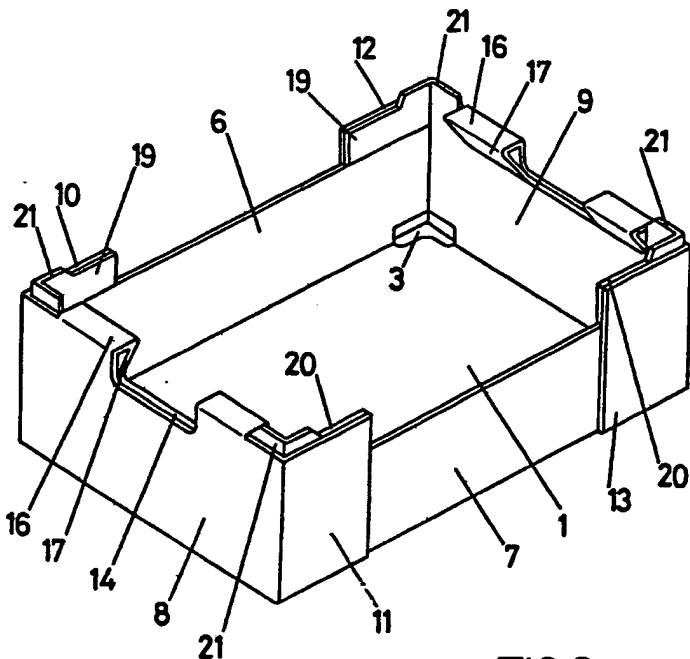


FIG.2

GB 2 201 663 A

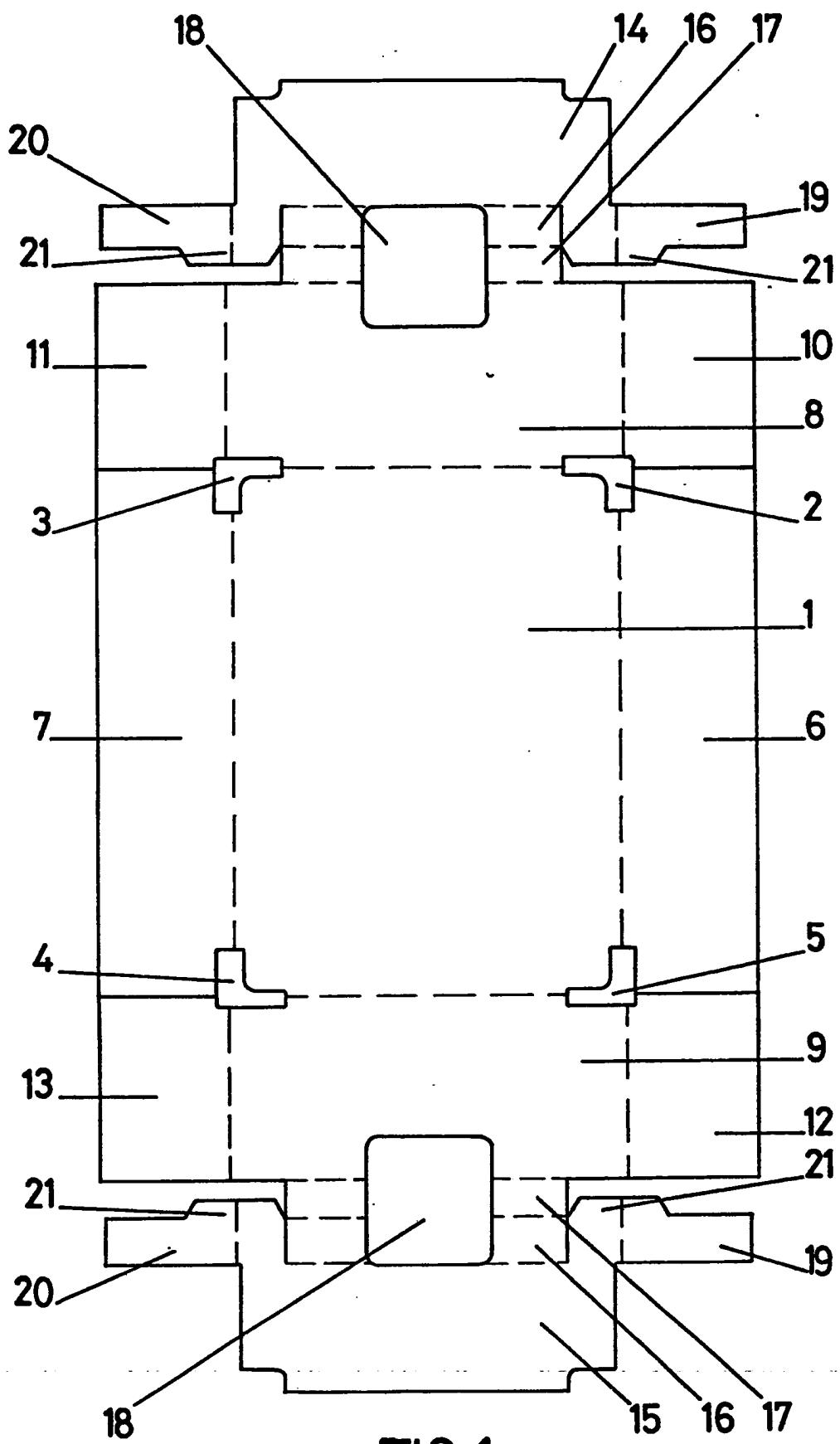


FIG. 1

2/2

2201663

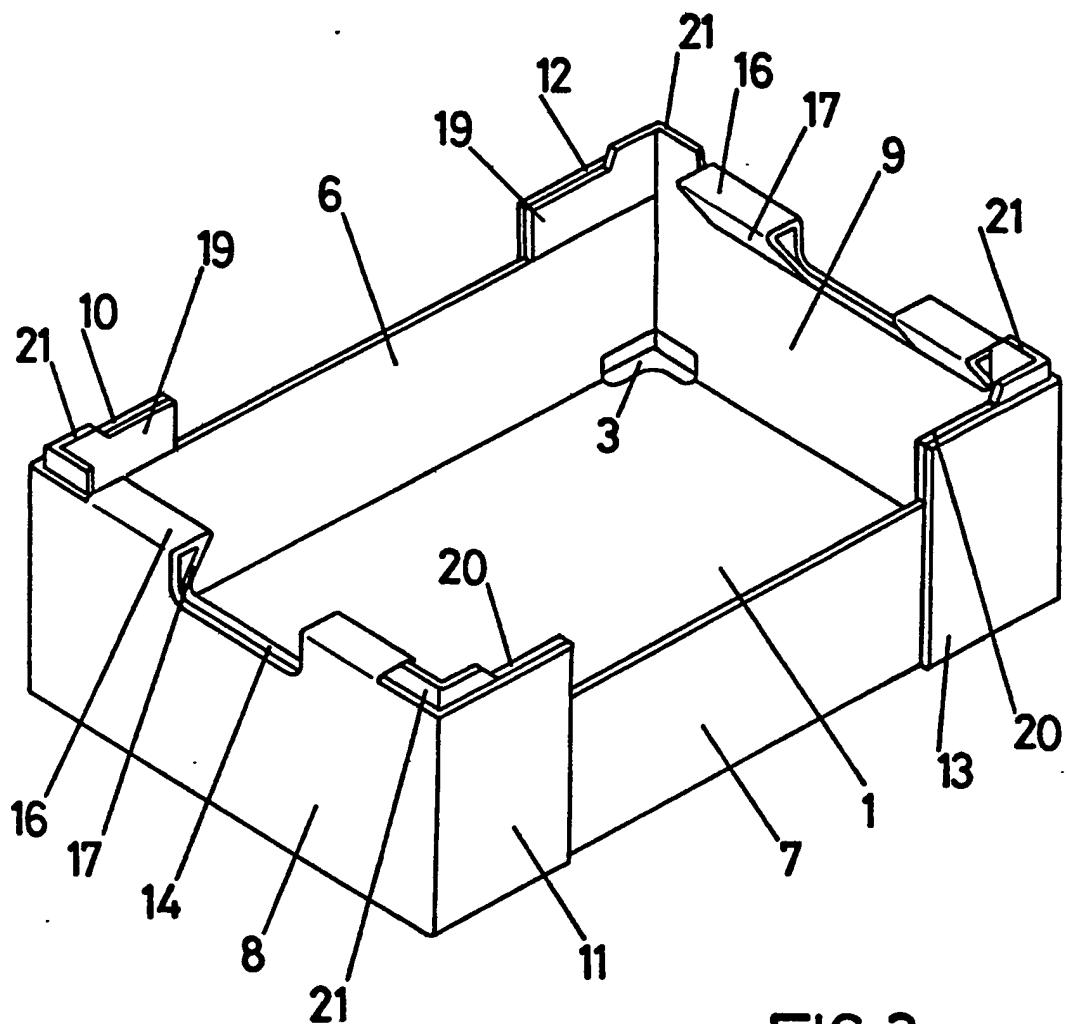


FIG.2

STACKABLE BOXES FOR CARRYING FRUIT

2201663

This invention relates to stackable boxes for carrying fruit.

The known art applied to the manufacture of tray-shaped boxes for fruit transport, that can be piled up both on storage and on transport, starts from the use of a cardboard sheet where die-forms and incisions can be performed so as to assemble and constitute them.

A tray-box is known, wherein the fronts or minor sides are formed by a double wall, obtained by extending the front and bending it by the corresponding split line inwards.

These double-walled fronts generally have their ends extended into laps, those of the front itself being arranged on the outer face of the laterals or major walls of the box, and those of the double wall inside, cutting the box angle, their edge standing beneath that of the front, so as to constitute a support for a superposed piled-up box.

Other cases show inner laps with different vertical splits, through which they bend in order to form corners of different shapes.

When the inner laps must stand at a lower level than the front edge, so that the box to be piled up rests on said laps, it has been provided that the shoulder of the double-walled front has a central cutting to enable the introduction of the hand fingers, both for piling up and for taking boxes out.

Embodiments of the invention may include some features belonging to such boxes, i.e., they may include a front formed by a double wall, with laps at its ends and with a cutting in the shoulder for passing the hand fingers.

Embodiments of the invention may be formed, as the former, from a cardboard sheet divided into zones corresponding to the bottom, laterals and double-walled fronts by die-forming with loss of material, cuts and splits which determine bending lines.

The essence of the invention lies on the formation as integral part of the inner wall of the front and providing its end edges and its lateral projections or laps with a small tube or raised edge that forms an angular lug.

1 Another main feature lies on providing by die-forming
with loss of material, with some cuttings performed at the
angles of the bottom of the box, which cuttings also partially
affect the fronts and the laterals at the rate corresponding
5 to the height of the angular lug formed at the laps of the
double front.

On the other hand, the double front laps have the length
of the main front laps, while their height corresponds to the
difference between the lateral walls and the main front, being
10 so arranged that it complements those walls by leaning against
their edge.

Finally, another characteristic of the invention lies
on the fact that that part of the shoulder of the double front
not being affected by the central cutting that allows the hand
15 fingers to pass, stretches towards the inside of the box by a
special fold that gives it a triangular sectioned-shape, so that
it forms supporting plateaux for the bottom of the box superpos-
edly piled up.

The novelty characteristics having been described in
20 fact involve the introduction of notorious advantages before
those known similar tray-boxes. Namely:

a) The adjustment of the angular lugs into the also an-
gular cuttings of the bottom of the superposed box, which car-
ries out a column piling-up and the immobilization thereof.

25 b) The effort of the upper part of the main front laps,
which gives it a higher resistance.

c) Providing with the plateaux constituting the double
front shoulder allows to increase the resistance in the pile,
partially releasing the angular lugs from weight.

30 For a better comprehension of the characteristics of
the invention, two drawings are attached hereto that represent
the following:

Figure 1.- Top view of the cardboard sheet from which
the tray-box is made. Its different divisions obtained by die-
35 -forming and splitting can be seen.

1 Figure 2.- Perspective view of the box assembled in
the position to be used.

5 The numerical references appearing in the drawings
correspond to: 1 box bottom; 2, 3, 4 and 5 angular cuttings.
10 affecting the bottom angles and, partially, the laterals 6
and 7 and fronts 8 and 9. Each one of the fronts has its ends
extended into both laps 10 and 11 corresponding to the front 8
and 12 and 13 corresponding to the front 9. The fronts themsel-
ves extend into extensions similar to their amplitude 14 and
15 respectively. The junction of the fronts with their exten-
sions is formed by a double strip 16 and 17, which determine
in the assembly the formation of the triangular plateaux, such
as shown in figure 2 of the drawings. A central cutting 18
affecting the plateaux zone determines that, in the assembly,
15 the front shoulder is cut down for allowing the hand fingers
to pass for handling the box. Lugs 19 and 20 into which each
one of the double fronts is extended, lean in the assembly on
the inner face of the lugs of the main front, being mounted
20 as an extension of the laterals edge, and form by the upper
part a projection 21 which is an angular lug fitting into the
cuttings of the bottom angles of the box.

25 The result of the assembly, as shown in figure 2,
lets see that the angular lugs 21 are in the coupling position
in respect of the angular cuttings of the bottom, so as to
allow the adjustment in the box pile, in cooperation with the
plateaux of the double front shoulder.

30 The outer laps of the fronts, when laterally leaning
against the box sides, establish a small-case for the angular
lugs, behaving too as coupling and protection guide, since
they hide them as said laps are leveled with respect to the
bottom of the box.

Claims:

1. A stackable box for carrying fruit comprising a base, a pair of end walls, a pair of side walls, protrusions extending above the height of the end and side walls, and openings in the base, wherein the protrusions are configured and the openings are positioned in relation to the protrusions so that the protrusions can be received by corresponding openings in a similar box when stacked thereby locating the stacked boxes in the plane of the base, and the box is formed from a single folded sheet into which the protrusions and the openings have previously been cut.
2. A stackable box according to claim 1, wherein each one of the protrusions is in the form of an angled lug, extending along a part of the end and side wall, at each corner of the box.
3. A stackable box according to claim 1 or claim 2, wherein at each corner of the box a portion of the single folded sheet which forms the end wall extends around the corner and along a part of the side wall.
4. A stackable box according to claim 1, claim 2 or claim 3, wherein each portion of the sheet which forms one of the end walls comprises inner and outer portions which fold over one another to provide an end wall of double thickness, and the inner and outer portions are linked by a pair of linking portions which are folded such that one of them forms a support surface, extending in the plane of the base, for supporting the base of a stacked box.
5. A foldable sheet shaped for forming a stackable box according to any one of the preceding claims.

1

6. A FRUIT TRAY-BOX, constituted from a cardboard sheet,
wherein die-formings with loss of material, cuts and splits have
been performed, which define the bottom of the box, the laterals
and the fronts, the latter being formed by a double wall, as
they are extended into a portion that bends towards the inside
of the box and both surfaces, front and double wall, extended
by their ends by means of lateral laps for closing the corners,
the shoulder being formed by the fronts and there being a cen-
tral cutting or recess to enable the hands to pass for handling
the boxes, characterized by comprising, as an integral part of
the inner wall of the front and affecting the edge of its end
and its lateral projections or laps, a raised edge constituting
an angular lug which fits into the angles of the bottom of an-
other box superposedly piled up, for which it has been provided
that some cuttings are performed by die-forming with loss of
material in the angles of the box bottom, said cuttings affect-
ing partially too the fronts and the laterals at the rate that
corresponds to the angular lug, the coupling being hidden by
the laps of the fronts that outerly lean against the laterals
of the box, thereby forming a small-case which is a coupling gui
de too.

7. A FRUIT TRAY-BOX, according to claim 6, characterized
in that the laps of the inner double front have the length of
the laps of the main front, while their height corresponds to
the difference between the lateral walls of the box and said
main front, being so arranged that they complement those walls
by leaning on their edge.

8. A FRUIT TRAY-BOX, according to claims 6, and 7, cha-
racterized in that the part of the shoulder of the double front
which is not affected by the central cutting, stretches towards
the inside of the box, by a special fold, determined by two pa-
rallel strips delimited by splits that give it a triangular
section, forming support plateaux for the bottom of the box
which is superposed in the pile.

9. A stackable box substantially as hereinbefore described with reference to figure 2 of the accompany drawings.

10. A foldable sheet substantially as hereinbefore described with reference to figure 1 of the accompanying drawings.